

REMARKS

In the Office Action¹, the Examiner took the following actions:

rejected claims 1, 2, 4, 14 and 21 under 35 U.S.C. § 102(b)
as being anticipated by U.S. Patent No. 6,433,609 to
Voldman; and

objected to claims 3, 5-13, and 15 as being dependent upon
a rejected base claim, but indicated that these claims would
be allowable if rewritten in independent form including all the
limitations of the base claim and any intervening claims.

Applicants thank the Examiner for the indication of allowable subject matter, but respectfully traverse the objection.

Claims 16-20 were previously canceled. Upon entry of this amendment, claims 1-15 and 21 remain pending and under current examination.

Applicants have amended claims 1 and 4. Specifically, Applicants have amended claim 1 to recite “the region having a deeper bottom than other regions in the trench, and all of the region having the deeper bottom being covered with the top gate electrode” (emphasis added). Claim 4, although of different scope, is amended in a similar manner. Support for the amendments to claims 1 and 4 can be found, for example, in FIG. 8C, of Applicants’ specification.

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Applicants respectfully traverse the rejection of claims 1, 2, 4, 14 and 21 under 35 U.S.C. § 102(b) as being anticipated Voldman because the reference fails to teach each and every element recited in independent claims 1 and 4.

In order to support a rejection under 35 U.S.C. § 102, each and every element of each claim in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” See M.P.E.P. § 2131, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Claim 1 recites a semiconductor device including, among other things, “an isolation region . . . having a region in the trench around the MOSFET, the region having a deeper bottom than other regions in the trench, and all of the region having the deeper bottom being covered with the top gate electrode.” Voldman fails to teach at least the claimed “region in the trench . . . all of the region having the deeper bottom being covered with the top gate electrode.”

Voldman discloses in Fig. 1B thick field oxide regions 9 and first gate electrode 7, associated by the Examiner with the claimed “isolation region” and top gate electrode respectively recited in claim 1. To the extent that the Examiner’s characterization is correct, and Applicants do not necessarily agree that it is, Voldman only teaches forming electrode 7 such that it covers gate insulating film 6. Voldman, however, fails to teach “an isolation region . . . having a region in the trench around the MOSFET, the region having a deeper bottom than other regions in the trench, and all of the region having the deeper bottom being covered with the top gate electrode,” as recited in

claim 1. Accordingly, Voldman fails to teach each and every element recited in claim 1 and fails to anticipate claim 1.

Claim 4, although of different scope, recites similar features as those discussed above with respect to claim 1, and claim 4 is not anticipated by Voldman for similar reasons as claim 1. Claims 2, 14, and 21 depend from independent claims 1 or 4 and are allowable based on their corresponding dependence. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 1, 2, 4, 14, and 21 under 35 U.S.C. § 102(b).

Independent claims 1 and 4 are not anticipated by Voldman for the above-discussed reasons. Accordingly, Applicants deem the objection to claims 3, 5-13 and 15, which depend from their corresponding independent claims 1 or 4, overcome. Applicants therefore respectfully request that the Examiner withdraw the objection to claims 3, 5-13, and 15 at least due to their dependence from allowable base claims.

In view of the foregoing, Applicants respectfully submit that the pending claims are in condition for allowance. Accordingly, Applicants respectfully request prompt and favorable action by the Examiner and allowance of claims 1-15 and 21.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account No. 06-0916.

Respectfully submitted,

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